

ZOOLOGY.—*Five new Chinese squirrels*.¹ A. BRAZIER HOWELL,
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Among the Chinese mammals in the United States National Museum are specimens representing five new races of sciuriform rodents, which may be known as follows:

Eutamias asiaticus umbrosus subsp. nov.

Type.—Male adult, skin and skeleton no. 240744, U. S. National Museum, from 140 miles south of Lanchowfu, Kansu, China; August 21, 1923. Collected by F. R. Wulsin, National Geographic Society Central China Expedition; original number 1118.

Diagnosis.—A dark colored chipmunk differing from *intercessor*, its nearest ally, in the absence of gray hairs throughout the darker areas of the head and shoulders. The coloration of the head is darker and duller, and the gray tips to the hairs upon the upper side of the tail practically hide any ochraceous markings.

Skin.—As above, with the transition between the color of the sides and the buffy whitish of the under parts more abrupt than in *intercessor*. The whole anterior half of the dorsum presents a much more saturate appearance, the pelage is longer and there is a more pronounced ochraceous overwash on the two medial light stripes of the middle back. The feet are also slightly darker and more ochraceous, this being more pronounced upon the fore feet.

Skull.—As in *intercessor* but a bit more slender and bullae smaller, although this difference may not hold good in series, as but one good adult skull is now available.

Measurements.—Collector's measurements of the type are: head and body, 155; tail, 115; foot, 38; ear, 17. Total length of the skull is 42 mm.

Material.—Four specimens: two from 120 and 140 miles south of Lanchowfu, and two from Sungpan, Szechwan.

Remarks.—Although the skins are in summer pelage it is obvious from the coat that it is a more strictly mountainous form than is *intercessor*. The Kansu examples are evidently from the north slope of the Minshan Range of mountains, which marks the boundary between that province and Szechwan, while the Sungpan specimens are from just south of this range. Whether the race is confined to this circumscribed region is a matter for conjecture.

Dremomys rufigenis lentus subsp. nov.

Type.—Male adult, skin and skull no. 240384, U. S. National Museum, from near Wenchuanhsien, Szechwan, China, altitude 6000 feet; August 14, 1924. Collected by D. C. Graham; original number 14.

Diagnosis.—A rather large race, with back, flanks and cheeks uniformly colored. Rufous of underparts confined to chin and upper lips, anal region, and faintly along the inner margin of the hind legs. Postauricular spots buffy.

Skin.—With the exception of the postauricular spots, which are rather well defined, the whole upper surface, including feet, flanks, head and cheeks, are uniformly colored, the paler annulations of the hairs being more olivaceous than brown. The tail as usual is darker because of the greater preponderance

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of black upon the hairs. Below the rufous areas are rather sharply confined to a narrow space a couple of millimeters wide along the upper lips and upon the chin, and in the anal region, almost exclusively upon the base of the tail, but a narrow border of this color extends along the inner side of the hind leg. The throat, chest and belly are overwashed with gray showing a faint suggestion of buffiness. The under side of the tail is paler than the upper only because there is less black distad upon the hairs.

Skull.—The right zygoma is broken and the occipital and bullae are missing. On the whole the skull resembles that of *belfieldi*, but the anterolateral parts of the nasals extend farther ventrad, the premaxillae extend a marked distance farther caudad beyond the nasals, and the incisors are longer and heavier.

Specimen.—One, the type.

Measurements.—Collector's measurements are as follows: head and body, 200; tail, 155; foot, 50. The total length of the skull is about 54; interorbital width, 14.3; shortest length of nasals, 16.8; tips of nasals to caudal terminations of the premaxillaries, 20.7 mm.

Remarks.—No specimen of the Yunnan race *ornatus* is available, but this is easily distinguished from *lentus* by the ferruginous cheeks extending nearly to the level of the ears. In the same respect the latter differs from the typical race, and from *belfieldi* which has not only bright cheeks but much ferruginous in the tail as well.

Sciurus caniceps canigenus subsp. nov.

Type.—Male adult, skin and skull no. 241509, U. S. National Museum, from Hayensien, Hangchow Bay, Chekiang, China; December 10, 1925. Collected by Arthur de C. Sowerby; original number 1515.

Diagnosis.—A rather small race. Chin and cheeks very gray and without facial markings. No silvery tips to the hairs of the tail, and the terminal tuft exhibits a tendency to be black at base.

Skin.—The dorsal surface is of the normal sciurine annulated pattern, perfectly uniform save for a barely appreciable tendency toward darkening upon the head, though not upon the shoulders. The dorsal hairs have pale tips and the general tone of this surface varies from brownish to paler and grayer, this possibly being due to age but not to season. The cheeks, muzzle and chin are dark silvery gray with no vestige of brown. The ears are short and scantily haired and there is a whitish postauricular spot entirely hidden by the ears in the dried skins. The tail is unicolor with the back save that the annulations are coarser. There are no white tips to the caudal hairs but the terminal tuft exhibits a tendency—very strongly marked in one individual—to be black at base with the usual buffy tips to the hairs. The feet are gray, modified by the presence of black hairs. The gray of the chin extends upon the throat, but in the grayer specimens especially this is altered upon the chest to a creamy tint, and in the browner ones, to a faintly ochraceous overwash, which extends over the belly and the inside of the hind legs.

Skull.—As with so many sciuiromorphs, there is nothing particularly distinctive cranially, save that the skull is much smaller than in true *caniceps*.

Measurements.—Collector's measurements of the type are: head and body, 194; tail, 156; hind foot, 47; and ear, 21 mm. Measurements of the skull are: total length, 50; zygomatic width, 30.5; interorbital width, 17; and upper tooth row, 10 mm.

Material.—Two specimens from Kangpu and three from Haiyehsien, both localities in Chekiang.

Remarks.—The relationship of this race unquestionably lies with *caniceps*, although it may ultimately be advisable to assign it full specific rank. The occurrence of a squirrel of this group so far east in China is somewhat of a surprise. As the specimens at hand were taken in winter it is evident that this form does not assume a brighter coat at this season as do some of the other subspecies. Unfortunately, the only skin available of true *caniceps* is in this bright pelage, but it is evident that *canigenus* is browner about the top of the head, the feet are more silvery (less buffy), and *caniceps* entirely lacks the ochraceous wash of the underparts.

***Petaurista rubicundus*, sp. nov.**

Type.—Nursing female, skin only; no. 240857, U. S. National Museum, from Mapiantung, Szechwan, China. Killed by native hunters in the fall of 1924 and secured by D. C. Graham.

Diagnosis.—A flying squirrel with underparts light but bright rufous; face, chin, sides of neck and feet darker rufous, and hairs of the remainder of the body giving the appearance of being broadly tipped with the same color. Tip of tail black.

Skin.—The underparts are palest mediad, being almost apricot color, but gradually deepening to intense rufous upon the throat and borders of the membranes. The feet are of the same color but a trifle darker. The pelage of the dorsal surface is thick and full, plumbeous at base, the shorter hairs with brown tips. The very numerous guard hairs are annulated first very dark brown, then black for one or two millimeters followed by ochraceous rufous for some ten millimeters, and finally, short tips of glossy black, the latter hardly distinguishable in general effect. The ears are thin and almost hairless, and the postauricular spots are not differentiated. The hairs of the face are deep rufous with plumbeous bases and short black tips, resulting in a rich effect. The proximal portion of the tail is dull mahogany, with short black tips that gradually lengthen caudad until the tail tip is entirely black. The skin is unaccompanied by measurements but the hind foot has a length of about 72 mm.

Material.—One specimen, the type.

Remarks.—The type is a flat skin in beautiful pelage and the animal was skinned through the mouth in a truly expert manner, leaving no discernible break in the pelt. Unfortunately the skull is missing, but the specimen is evidently so different from anything heretofore described that I have no choice but to name it. An effort to establish tentative relationship with some of the Indian members of the genus was without result.

***Petaurista sulcatus*, sp. nov.**

Type.—Female adult, skin and skull no. 219206, U. S. National Museum, from Hsinlungshan, 65 miles northeast of Peking, Chihli, China, altitude 3000 feet; August 18, 1917. Collected by Arthur deC. Sowerby; original number 1017.

Diagnosis.—A small *Petaurista* with dorsal coloration of the general type of *P. melanopterus*, *leucogenys*, etc. Maxillary incisors, very broad, each with a well-defined groove.

Skin.—The hairs of the middle back are plumbeous at base and browner distad, while numerous longer hairs have buffy tips. The hairs of the sides, especially upon the hips, and of the upper parachutes, lack the browner distal portion mentioned above and appear almost black, except for the buffy tips. There is but the suggestion of an ochraceous spot behind the ear, and ochraceous areas upon both eye lids. The remainder of the head is distinctly lighter than the back and much grayer. The dorsum of the feet is so dark as to be practically black, ticked with a few buffy hairs. Upon the under surface of the body proper of the type specimen the hairs are palely plumbeous at base with white tips upon those over the throat and hinder belly, but with buffy tips elsewhere, while the hairs of the ventral surface of the parachute are wholly ochraceous. In the skin of the topotype these latter have plumbeous bases. There is a sharply-defined sooty spot upon the chin as is usual in many species.

Skull.—In general conformation the skull much resembles that of *leucogenys*, but the total breadth, as well as the width of the rostral tip, is narrower, and the interpterygoid fossa is much deeper. The molariform teeth are of the same type as in *melanopterus*, the premolar being a trifle smaller than the first molar. The maxillary incisors are broad (3 mm.) with a well defined, broad groove laterad to the middle. Close inspection shows that this groove exhibits a tendency toward doubleness, with an extremely faint ridge between. The mandibular incisors are correspondingly robust.

Measurements.—Collector's measurements of the type and topotype are: head and body 310–305; tail, 343–330; foot 65–63; and ear, 40 mm. Measurements of the skulls are: condylobasilar length, 54–52.5; zygomatic width, 41.5–41; interorbital width, 15–14.6; maxillary tooth row, 13.7–14; and greatest width of maxillary incisive alveoli, 8.7–9.

Material.—Three specimens: two, including the type, from Hsinlungshan, and one skin without skull from Eastern Tombs, Chihli.

Remarks.—All specimens of the Chinese members of this genus of what may be termed the normal sciuropterine type of coloration have heretofore been referred to either *P. melanopterus*, *xanthotis*, or *filchnerinae*. The last is a large squirrel probably identical with *xanthotis*. Since Milne-Edward's original description of the last-mentioned, the only published record of its capture noted is that by Lyon (1907) of a specimen from Kansu. This is before me and seems to be at least subspecifically distinct from *melanopterus*, and differences in the molar pattern renders it not unlikely that the relationship is not that close. At any rate, these flying squirrels are of large size with skulls normal, including narrow, simple, maxillary incisors.

The reference of chief interest in the present connection is that of Pere Huede (Mems. Hist. Nat. Emp. Chinois, IV, 1898). In this there is quite lengthy discussion of the molar pattern of several flying squirrels, but none of the incisors. His identifications need careful checking, to say the least, but his plates seem to be exceptionally good and accurate. Turning to his figures illustrating several views of his so-called *Pteromys melanopterus* it is at once seen that this is a very different animal from that of Milne-Edwards, distinguishable instantly by the broad, *grooved*, maxillary incisors. Comparison shows that these figures are exceptionally fine representations, in every respect, of the skull of *P. sulcatus*.

It was at first thought that this character was probably of generic significance, but it was found that the maxillary incisors of *P. fulvinus*—a very different type of squirrel—may vary from the pattern normal for the genus in somewhat the same direction. In four skulls from Kashmir two have simple incisors, a third is faintly ridged and grooved, and a fourth more definitely has four faint ridges and three equally faint grooves of the same width between them. To my mind this circumstance at once settles in the negative the question of generic, or even subgeneric, separation of the Chinese examples.

The skin from Eastern Tombs, without skull, date, or measurements, is almost certainly a winter specimen of this species. Its pelage is denser, it largely lacks the ochraceous tone to the underparts of the body proper, and the head is considerably darker; but it is similar in other respects.

ENTOMOLOGY.—*Notes on the Dexiid genera Cordyligaster and Eucordyligaster.*¹ J. M. ALDRICH, U. S. National Museum.
(Communicated by S. A. ROHWER.)

In some material received from Professor Melander was a specimen of a yellow *Cordyligaster* from South America; the process of identification led to some results worthy of publication. It would seem that no yellow forms have come to light since the description of two species about eighty years ago.

There are two American genera closely allied in all but one character. In *Cordyligaster* the calypters are very small, while in *Eucordyligaster* they are of normal size. The difference is striking. The former genus has three known species and the latter two; all five are tropical, but one has a wide northern range and is common in the vicinity of the District of Columbia. This species, *Eucordyligaster minusculus*, is so unmistakable and so well represented in collections that the generic characters may be omitted here.

CORDYLIGASTER Macquart

- Cordyligaster* Macquart, Dipt. Exot. 2 (pt. 3): 247 (reprint 90). 1843.—Schiner, Novara, 322. 1868.—Van der Wulp, Tijdsch. v. Ent. 28: 191. 1885; Biologia, Dipt. 2: 252. 1891.—Coquillett, Type-Species N. A. Dipt. 527. 1910.—Adams, in Williston's Manual, 356. 1908.—Townsend, Ins. Ins. Menst. 4: 122. 1916.
Megistogaster Macquart, Dipt. Exot. Suppl. 2 (pt. 2): 185 (reprint 212) 1851.—Townsend, Ins. Ins. Menst. 4: 7. 1916.
Cordylidexia Giglio-Tos, Ditt. del Mess. 3: 67. 1894.
Eucordylidexia Townsend, Ins. Ins. Menst. 3: 41. 1915.

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